

CLAIMS

We claim:

1. A steer axle and suspension assembly for a vehicle having a frame including first and second longitudinal frame rails extending parallel to one another, said assembly comprising:
 - a steer axle assembly including
 - an axle beam defining a first bore at a first longitudinal end and a second bore at a second longitudinal end, said axle beam extending transverse to said first and second frame rails;
 - a first kingpin disposed within said first bore in said axle beam;
 - a second kingpin disposed within said second bore in said axle beam;
 - a first steering knuckle rotatably supported on said first kingpin; and,
 - a second steering knuckle rotatably supported on said second kingpin; and,
 - a suspension including
 - a suspension member connected to said frame at a first end and to said steer axle assembly at a second end; and,
 - a first suspension arm connected to said frame at a first end and to said steer axle assembly at a second end at a location outboard of said first and second frame rails, said first suspension arm extending longitudinally at an angle relative to said first and second frame rails.
2. The steer axle and suspension assembly of claim 1 wherein said second end of said first suspension arm is mounted on said axle beam.
3. The steer axle and suspension assembly of claim 1 wherein said second end of said first suspension arm is mounted on said first kingpin.

4. The steer axle and suspension assembly of claim 1 wherein said second end of said first suspension arm is mounted on said first steering knuckle.

5. The steer axle and suspension assembly of claim 1 wherein said suspension member comprises a second suspension arm.

6. The steer axle and suspension assembly of claim 5 wherein said second suspension arm extends substantially parallel to said first and second frame rails.

7. The steer axle and suspension assembly of claim 6 wherein one of said first and second suspension arms is connected to said frame forward of said axle beam and another of said first and second suspension arms is connected to said frame rearward of said axle beam.

8. The steer axle and suspension assembly of claim 6 wherein both of said first and second suspension arms are connected to said frame forward of said axle beam.

9. The steer axle and suspension assembly of claim 6 wherein both of said first and second suspension arms are connected to said frame rearward of said axle beam.

10. The steer axle and suspension assembly of claim 1 wherein said second end of said suspension member is connected to said steer axle assembly at a location outboard of said first and second frame rails, said suspension member extending longitudinally at an angle relative to said first and second frame rails.

11. The steer axle and suspension assembly of claim 10 wherein one of said suspension member and said first suspension arm is connected to said frame forward of said axle beam and another of said suspension member and said first suspension arm is connected to said frame rearward of said axle beam.

12. The steer axle and suspension assembly of claim 10 wherein said second end of said suspension member and said second end of said first suspension arm are both mounted on the same one of said axle beam, said first kingpin and said first steering knuckle.

13. The steer axle and suspension assembly of claim 10 wherein one of said second end of said suspension member and said second end of said first suspension arm is mounted to one of said axle beam, said first kingpin and said first steering knuckle and another of said second end of said suspension member and said second end of said first suspension arm is mounted to another of said axle beam, said first kingpin and said first steering knuckle.

14. The steer axle and suspension assembly of claim 1 wherein said suspension member comprises a leaf spring rigidly coupled to said axle beam.

15. The steer axle and suspension assembly of claim 14 wherein both of said leaf spring and said first suspension arm are connected to said frame forward of said axle beam.

16. The steer axle and suspension assembly of claim 14 wherein both of said leaf spring and said first suspension arm are connected to said frame rearward of said axle beam.

17. The steer axle and suspension assembly of claim 14 wherein one of said leaf spring and said first suspension arm is connected to said frame forward of said axle beam and another of said leaf spring and said first suspension arm is connected to said frame rearward of said axle beam.

18. A steer axle and suspension assembly for a vehicle having a frame including first and second longitudinal frame rails extending parallel to one another, said assembly comprising:

a steer axle assembly including

an axle beam defining a first bore at a first longitudinal end and a second bore at a second longitudinal end, said axle beam extending transverse to said first and second frame rails;

a first kingpin disposed within said first bore in said axle beam;

a second kingpin disposed within said second bore in said axle beam;

a first steering knuckle rotatably supported on said first kingpin; and,

a second steering knuckle rotatably supported on said second kingpin; and,

a suspension including

a first suspension member connected to said frame at a first end and to said steer axle assembly at a second end;

a first suspension arm connected to said frame at a first end and to said steer axle assembly at a second end at a location outboard of said first and second frame rails, said first suspension arm extending longitudinally at an angle relative to said first and second frame rails;

a second suspension member connected to said frame at a first end and to said steer axle assembly at a second end; and,

a second suspension arm connected to said frame at a first end and to said steer axle assembly at a second end at a location outboard of said first and second frame rails, said second suspension arm extending longitudinally at an angle relative to said first and second frame rails.

19. The steer axle and suspension assembly of claim 18 wherein said first and second suspension members comprise leaf springs rigidly coupled to said axle beam.

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20. The steer axle and suspension assembly of claim 18 wherein said second ends of said first and second suspension members are each connected to said steer axle assembly at locations outboard of said first and second frame rails and said first and second suspension members extend longitudinally at an angle relative to said first and second frame rails.